

IN THE CLAIMS:

Please cancel claims 62 and 79-84.

Please amend the claims as follows:

1. – 28. Cancelled.

29. (Previously Presented) A method of cementing a borehole, comprising:
extending a drill string into the earth to form the borehole, the drill string including
an earth removal member having at least one fluid passage therethrough, the earth
removal member operatively connected to a lower end of the drill string;
drilling the borehole to a desired location using a drilling mud passing through the
at least one fluid passage;
providing at least one secondary fluid passage between the interior of the drill
string and the borehole;
providing a barrier across the at least one secondary fluid passage;
rupturing the barrier, thereby opening the at least one secondary fluid passage;
and
directing a physically alterable bonding material into an annulus between the drill
string and the borehole through the at least one secondary fluid passage.

30. (Original) The method of claim 29, further comprising flowing a physically
alterable bonding material through the drill string and into an annulus between the drill
string and the borehole prior to directing the physically alterable bonding material into
the annulus between the drill string and the borehole through the at least one secondary
fluid passage.

31. – 38. Cancelled.

39. (Previously Presented) The method of claim 29, wherein rupturing the barrier comprises increasing fluid pressure on one side of the barrier to a level sufficient to rupture the barrier.

40. (Previously Presented) The method of claim 29, wherein the at least one secondary passage is opened when the physically alterable bonding material reaches the location of the at least one secondary passage after flowing the physically alterable bonding material through the drill string and into the annulus.

41. (Previously Presented) The method of claim 29, wherein the physically alterable bonding material comprises cement.

42. (Previously Presented) The method of claim 29, wherein the earth removal member is a drill bit.

43. (Previously Presented) The method of claim 29, wherein directing the physically alterable bonding material through the at least one secondary fluid passage includes blocking the at least one fluid passage through the earth removal member.

44. (Previously Presented) The method of claim 43, wherein blocking the at least one fluid passage through the earth removal member comprises:

providing a ball seat positioned in intersection with the at least one fluid passage; and

selectively positioning a ball on the ball seat and in a blocking position over the at least one fluid passage.

45. (Previously Presented) The method of claim 44, further comprises providing the ball to the ball seat from a location remote therefrom.

46. – 48. Cancelled.

49. (Previously Presented) The method of claim 29, further comprising providing a float shoe intermediate the location where the physically alterable bonding material is introduced into the interior of the drill string and the at least one secondary passage; and

positioning a float collar in the float shoe, thereby preventing flow of the physically alterable bonding material from the location between the drill string and borehole to the interior of the drill string.

50. (Previously Presented) The method of claim 49, wherein positioning the float collar is undertaken during the flowing of the physically alterable bonding material into the annulus.

51. (Previously Presented) The method of claim 49, wherein positioning the float collar is undertaken after the flowing of the physically alterable bonding material into the annulus is completed.

52. (Previously Presented) The method of claim 29, further comprising:
providing at least one additional secondary passage intermediate the lower terminus of the borehole and a surface location;
cementing the borehole at a location adjacent to the terminus of the borehole;
further directing the physically alterable bonding material down the drill string;
and
directing the physically alterable bonding material through the additional secondary passage.

53. (Previously Presented) A method of cementing a borehole, comprising:
extending a drill string into the earth to form the borehole, the drill string including an earth removal member having at least one fluid passage therethrough, the earth removal member operatively connected to a lower end of the drill string;
drilling the borehole to a desired location using a drilling mud passing through the at least one fluid passage;

providing at least one secondary fluid passage between an interior of the drill string and the borehole;

providing a sleeve positioned over an element of the drill string and intermediate the at least one secondary passage and the annulus and at least one shear element interconnecting the sleeve to the element of the drill string;

moving the sleeve to allow a physically alterable bonding material to flow through the at least one secondary passage; and

directing the physically alterable bonding material into an annulus between the drill string and the borehole.

54. (Previously Presented) The method of claim 53, further comprising using fluid pressure to shear the at least one shear element.

55. (Previously Presented) The method of claim 53, wherein the at least one shear element comprises a pin.

56. (Previously Presented) The method of claim 53, further comprising:

providing a piston integral with the sleeve; and

using hydrostatic pressure to urge the piston to open the at least one secondary passage to communicate with the annulus.

57. (Previously Presented) A method of cementing a borehole, comprising:

extending a drill string into the earth to form the borehole, the drill string including an earth removal member having at least one fluid passage therethrough, the earth removal member operatively connected to a lower end of the drill string;

drilling the borehole to a desired location using a drilling mud passing through the at least one fluid passage;

providing at least one secondary fluid passage between an interior of the drill string and the borehole;

providing a float shoe intermediate a location where a physically alterable bonding material is introduced into the interior of the drill string and the at least one secondary passage;

positioning a float collar in the float shoe, thereby preventing flow of the physically alterable bonding material from the location between the drill string and borehole to the interior of the drill string; and

directing the physically alterable bonding material into an annulus between the drill string and the borehole through the at least one secondary fluid passage.

58. (Previously Presented) The method of claim 57, wherein positioning the float collar is undertaken during the flowing of the physically alterable bonding material into the annulus.

59. (Previously Presented) The method of claim 57, wherein positioning the float collar is undertaken after the flowing of the physically alterable bonding material into the annulus is completed.

60. (Previously Presented) A method of cementing a borehole, comprising:
extending a drill string into the earth to form the borehole, the drill string including an earth removal member having at least one fluid passage therethrough, the earth removal member operatively connected to a lower end of the drill string;

drilling the borehole to a desired location using a drilling mud passing through the at least one fluid passage;

providing at least one secondary fluid passage between an interior of the drill string and the borehole;

directing a physically alterable bonding material into an annulus between the drill string and the borehole through the at least one secondary fluid passage; and

allowing the physically alterable bonding material to harden in the annulus between the drill string and the borehole.

61. (Previously Presented) A method of cementing a borehole, comprising:
- extending a drill string into the earth to form the borehole, the drill string including an earth removal member having at least one fluid passage therethrough, the earth removal member operatively connected to a lower end of the drill string;
- drilling the borehole to a desired location using a drilling mud passing through the at least one fluid passage;
- providing at least one secondary fluid passage between an interior of the drill string and the borehole;
- directing a physically alterable bonding material into an annulus between the drill string and the borehole through the at least one secondary fluid passage; and
- positioning a one way valve intermediate a location where the physically alterable bonding material is introduced into the interior of the drill string and the at least one second passage, thereby preventing flow of the physically alterable bonding material from the location between the drill string and borehole to the interior of the drill string; and
- allowing the physically alterable bonding material to harden in the annulus.

62. Cancelled.
63. (Previously Presented) A method of cementing a borehole, comprising:
- extending a drill string into the earth to form the borehole, the drill string including an earth removal member having at least one fluid passage therethrough, the earth removal member operatively connected to a lower end of the drill string;
- drilling the borehole to a desired location using a drilling mud passing through the at least one fluid passage;
- providing at least one secondary fluid passage between an interior of the drill string and the borehole;
- directing a physically alterable bonding material into an annulus between the drill string and the borehole through the at least one secondary fluid passage;
- providing at least one additional secondary passage intermediate the lower terminus of the borehole and a surface location;

cementing the borehole at a location adjacent to the terminus of the borehole; further directing the physically alterable bonding material down the drill string; and

directing the physically alterable bonding material through the additional secondary passage.

64. (Previously Presented) The method of claim 29, further comprising drilling through at least a portion of the earth removal member.

65. (Previously Presented) The method of claim 29, further comprising milling at least a portion of the earth removal member.

66. (Previously Presented) The method of claim 53, further comprising drilling through at least a portion of the earth removal member.

67. (Previously Presented) The method of claim 53, further comprising milling at least a portion of the earth removal member.

68. (Previously Presented) The method of claim 60, further comprising drilling through at least a portion of the earth removal member.

69. (Previously Presented) The method of claim 60, further comprising milling at least a portion of the earth removal member.

70. (Previously Presented) The method of claim 61, further comprising drilling through at least a portion of the earth removal member.

71. (Previously Presented) The method of claim 61, further comprising milling at least a portion of the earth removal member.

72. (Previously Presented) A method of cementing a borehole, comprising:
extending a drill string into the earth to form the borehole, the drill string including an earth removal member having at least one fluid passage therethrough, the earth removal member operatively connected to a lower end of the drill string;
drilling the borehole to a desired location using a drilling mud passing through the at least one fluid passage;
providing at least one secondary fluid passage between an interior of the drill string and the borehole;
directing a physically alterable bonding material into an annulus between the drill string and the borehole through the at least one secondary fluid passage; and
drilling through at least a portion of the earth removal member.

73. (Previously Presented) The method of claim 72, wherein the earth removal member comprises a drill bit.

74. (Previously Presented) The method of claim 75, wherein the drill string comprises a casing.

75. (Previously Presented) The method of claim 75, wherein the drill string comprises a liner.

76. (Previously Presented) The method of claim 72, wherein the at least one secondary fluid passage is located in a sidewall of the earth removal member.

77. (Previously Presented) The method of claim 29, wherein the at least one secondary fluid passage is located in a sidewall of the earth removal member.

78. (Previously Presented) A method of cementing a borehole, comprising:
extending a drill string into the earth to form the borehole, the drill string including an earth removal member having at least one fluid passage therethrough, the earth removal member operatively connected to a lower end of the drill string;

drilling the borehole to a desired location using a drilling mud passing through the at least one fluid passage;

providing at least one secondary fluid passage between an interior of the drill string and the borehole;

directing a physically alterable bonding material into an annulus between the drill string and the borehole through the at least one secondary fluid passage; and

milling at least a portion of the earth removal member.

79. – 84. Cancelled.

85. (Previously Presented) A method of cementing a borehole, comprising:

operating a drill string to form the borehole, the drill string including a drill bit positioned at a lower end of the drill string, wherein the drill bit has at least one fluid passage therethrough, and at least one secondary fluid passage between an interior of the drill string and the borehole;

drilling the borehole to a desired location while flowing a drilling mud through the at least one fluid passage;

positioning a one-way valve above the at least one secondary passage; and

directing a cement through the at least one secondary fluid passage into an annulus between the drill string and the borehole, wherein the one way valve prevents the cement in the annulus from flowing back up the interior of the drill string.

86. (Previously Presented) The method of claim 85, wherein the at least one secondary fluid passage is initially closed.

87. (Previously Presented) The method of claim 86, further comprising opening the at least one secondary fluid passage after flowing the drilling mud.

88. (Previously Presented) The method of claim 87, wherein the at least one secondary fluid passage is opened using fluid pressure.

89. (Previously Presented) The method of claim 86, wherein the one way valve is positioned after flowing the drilling mud.
90. (Previously Presented) The method of claim 89, further comprising opening the at least one second fluid passage after flowing the drilling mud.
91. (Previously Presented) The method of claim 90, wherein the cement is directed into the annulus after the one way valve is positioned.
92. (Previously Presented) The method of claim 91, further comprising drilling through at least a portion of the drill bit.
93. (Previously Presented) The method of claim 91, further comprising milling through at least a portion of the drill bit.
94. (Previously Presented) The method of claim 90, wherein the at least one secondary fluid passage is opened using fluid pressure.

Please add the following new claims:

95. (New) A method of cementing a borehole, comprising:
extending a drill string into the earth to form the borehole, the drill string including an earth removal member having at least one fluid passage therethrough, the earth removal member operatively connected to a lower end of the drill string;
drilling the borehole to a desired location using a drilling mud passing through the at least one fluid passage;
providing at least one secondary fluid passage between an interior of the drill string and the borehole;
directing a physically alterable bonding material into an annulus between the drill string and the borehole through the at least one secondary fluid passage;

positioning a one way valve intermediate a location where the physically alterable bonding material is introduced into the interior of the drill string and the at least one second passage, thereby preventing flow of the physically alterable bonding material from the location between the drill string and borehole to the interior of the drill string; and

drilling through at least a portion of the earth removal member.

96. (New) The method of claim 95, further comprising providing a fluid barrier across the at least one secondary fluid passage.

97. (New) The method of claim 96, wherein the barrier comprises rupturable member.

98. (New) The method of claim 95, wherein the one-way valve is positioned after drilling is stopped.

99. (New) A method of cementing a borehole, comprising:

extending a drill string into the earth to form the borehole, the drill string including an earth removal member having at least one fluid passage therethrough, the earth removal member operatively connected to a lower end of the drill string;

drilling the borehole to a desired location using a drilling mud passing through the at least one fluid passage;

providing at least one secondary fluid passage between an interior of the drill string and the borehole;

directing a physically alterable bonding material into an annulus between the drill string and the borehole through the at least one secondary fluid passage;

positioning a one way valve intermediate a location where the physically alterable bonding material is introduced into the interior of the drill string and the at least one second passage, thereby preventing flow of the physically alterable bonding material from the location between the drill string and borehole to the interior of the drill string; and

milling at least a portion of the earth removal member.

100. (New) The method of claim 61, wherein the one-way valve is positioned after drilling is stopped.